

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (previously presented) A cable modem for down-converting an electromagnetic signal having complex modulations, comprising:
 - an oscillator to generate an in-phase oscillating signal;
 - a phase shifter to receive said in-phase oscillating signal and to create a quadrature-phase oscillating signal;
 - a first frequency down-conversion module to receive the electromagnetic signal and said in-phase oscillating signal;
 - a second frequency down-conversion module to receive the electromagnetic signal and said quadrature-phase oscillating signal; wherein
 - said first frequency down-conversion module further comprises a first frequency translation module and a first storage module, wherein said first frequency translation module samples the electromagnetic signal at a rate that is a function of said in-phase oscillating signal, thereby creating a first sampled signal; and
 - said second frequency down-conversion module further comprises a second frequency translation module and a second storage module, wherein said second frequency translation module samples the electromagnetic signal at a rate that is a function of said quadrature-phase oscillating signal, thereby creating a second sampled signal.

2. (previously presented) The cable modem of claim 1, wherein said quadrature-phase oscillating signal is out of phase with said in-phase oscillating signal by substantially 90 degrees.

3. (previously presented) The cable modem of claim 1, wherein said first storage device has a first storage first port and a first storage second port, said first storage first port being connected to said first sampled signal, and said first storage second port is connected to a first reference potential, and said second storage device has a second storage first port and a second storage second port, said second storage first port being connected to said second sampled signal, and said second storage second port is connected to a second reference potential.

4. (previously presented) The cable modem of claim 3, wherein said first storage device is a first capacitor, and said second storage device is a second capacitor.

5. (previously presented) The system of claim 3, wherein said first reference potential is substantially equal to ground, and said second reference potential is substantially equal to ground.

6-8. (previously canceled)

9. (previously presented) The cable modem of claim 1, wherein said first sampled signal is comprised of two or more voltage levels.

10. (previously presented) The cable modem of claim 9, wherein said first sampled signal is comprised of eight voltage levels.

11. (previously presented) The cable modem of claim 9, wherein said first sampled signal is comprised of sixteen voltage levels.

12. (previously presented) The cable modem of claim 1, wherein said second sampled signal is comprised of two or more voltage levels.

13. (previously presented) The cable modem of claim 12, wherein said second sampled signal is comprised of eight voltage levels.

14. (previously presented) The cable modem of claim 12, wherein said second sampled signal is comprised of sixteen voltage levels.

15. (previously presented) The cable modem of claim 1, wherein said first sampled signal is a first information output signal, and said second sampled signal is a second information output signal.

16. (previously presented) The cable modem of claim 1, further comprising a first amplifier receiving said first sampled signal and outputting a first amplified signal,

and a second amplifier receiving said second sampled signal and outputting a second amplified signal.

17. (previously presented) The cable modem of claim 16, further comprising a first filter receiving said first amplified signal and outputting a first filtered signal, and a second filter receiving said second amplified signal and outputting a second filtered signal.

18. (previously presented) The cable modem of claim 1, further comprising a first filter receiving said first sampled signal and outputting a first filtered signal, and a second filter receiving said second sampled signal and outputting a second filtered signal.

19. (previously presented) The cable modem of claim 1, wherein the electromagnetic signal has been transmitted over a coaxial cable to the cable modem.

20. (previously presented) The cable modem of claim 1, wherein the electromagnetic signal has been transmitted by a wireless method to the cable modem.

21-55. (Canceled)

56. (previously presented) The cable modem of claim 1, wherein said first frequency translation module comprises a first switch coupled to said first storage

module, and said second frequency translation module comprises a second switch coupled to said second storage module, and

wherein said first frequency down-conversion module further comprises a first control signal generator coupled to said first switch and coupled to receive said in-phase oscillating signal, and said second frequency down-conversion module further comprises a second control signal generator coupled to said second switch and coupled to receive said quadrature-phase oscillating signal.

57. (previously presented) The cable modem of claim 56, wherein each of said first and second switches comprises:

- a first port;
- a second port; and
- a third port.

58. (previously presented) The cable modem of claim 57, wherein said first port of said first switch receives the electromagnetic signal, said second port of said first switch receives a first control signal generated by said first control signal generator, and said third port of said first switch is coupled to said first storage device, and

wherein said first port of said second switch receives the electromagnetic signal, said second port of said second switch receives a second control signal generated by said second control signal generator, and said third port of said second switch is coupled to said second storage device.

59. (previously presented) The cable modem of claim 57, wherein said first port of said first switch is coupled to said first storage device, said second port of said first switch receives a first control signal generated by said first control signal generator, and said third port of said first switch is coupled to a first reference, and

wherein said first port of said second switch is coupled to said second storage device, said second port of said second switch receives a second control signal generated by said second control signal generator, and said third port of said second switch is coupled to a second reference.